WHAT IS CLAIMED IS:

1. In a method of assembling a lamp including the step of sealing a lamp burner envelope to form a light emitting chamber and the step of coating at least a portion of the surface of the lamp burner envelope, the improvement wherein the step of coating the burner envelope is performed before the step of sealing the burner envelope.

2. The method of Claim 1 wherein the burner envelope when completed as a lamp burner includes elements which would be damaged by baking in an oxygen containing atmosphere at temperatures greater than a certain temperature, the method further comprising the step of baking the coated burner envelope in an oxygen containing atmosphere at a temperature greater than the certain temperature.

3. The method of Claim 2 where the baking temperature is greater than about 400°C.

4. The method of Claim 2 wherein the step of baking the coated burner envelope comprises the steps of baking the burner envelope at a first baking temperature for a first baking period followed by the step of raising the baking temperature and baking the burner envelope for another period of time.

5. The method of Claim 1 further comprising the step of baking the coated burner envelope in an essentially oxygen free atmosphere.

6. The method of Claim 1 wherein portions of the lamp burner envelope are coated with a material which will be damaged if exposed to temperatures above a certain

temperature and wherein the sealing is performed by exposing one or more uncoated portions of the burner envelope to temperatures above the certain temperature, the method further comprising the step of preventing the exposure of the coated portions of the burner envelope adjacent the uncoated portions exposed to such temperatures from temperatures above the certain temperature.

7. The method of Claim 1 further comprising the step of aligning a filament in an IRR coated burner envelope including the step of determining the optimum position of the filament relative to the burner envelope by measuring the power applied to the filament to maintain a constant temperature of the filament.

8. The method of Claim 1 wherein the burner envelope is formed from one or more of the materials from the group consisting of glass, quartz glass, and ceramics.

9. The method of Claim 1 wherein the step of coating portions of the surface of the burner envelope includes the step of masking selected portions of the surface of the burner envelope so that the selected portions remain uncoated after the step of coating portions of the surface of the burner envelope.

10. The method of Claim 1 further comprising the step of cutting a generally tubular section of light transmitting material to form one or more lamp burner envelopes wherein the step of cutting is performed before the step of coating the burner envelope.

11. A method of assembling a lamp comprising the ordered steps of:

a. providing a burner envelope of light-transmitting material forming an internal light emitting chamber;

b. coating the exterior surface of the burner envelope;

c. positioning one or more electrical leads so that each of the leads provides an electrical connection from internal of the light emitting chamber to external of the envelope; and

d. sealing the burner envelope to hermetically seal the burner envelope to the leads to thereby seal the light emitting chamber.

12. In a method of making a lamp including the steps of (i) sealing a lamp burner envelope to hermetically seal the burner envelope to electrical leads to thereby seal a light emitting chamber and (ii) coating at least a portion of the surface of the lamp burner envelope, the step of baking the coated lamp burner envelope in an essentially oxygen free atmosphere.

13. In a method of making a lamp including the step of baking a coated lamp burner wherein some of the elements of the lamp burner will be damaged if baked in an atmosphere containing a certain amount of oxygen at temperatures greater than a certain temperature, the step of baking the lamp burner including baking the lamp burner in an atmosphere containing less than the certain amount of oxygen at a temperature greater than the certain temperature.

14. The method of Claim 13 wherein the baking atmosphere comprises

essentially nitrogen and/or argon.

15. The method of Claim 13 wherein the step of baking the lamp burner includes the steps of baking the lamp burner at a first baking temperature for a first period of time and then raising the bake temperature and baking the lamp burner for another period of time.

16. The method of Claim 15 wherein the step of raising the baking temperature and baking the lamp burner for a period of time is repeated one or more times.

17. In a process of depositing a layer of material on an array of elongated substrates in which the array is moved past one or more sources of deposition material on a carrier while simultaneously rotating each substrate about its longitudinal axis, a method of improving the vertical density of the array comprising the steps of supporting one or more substrates on a single rod and rotating the rod to thereby rotate the substrates supported thereon about the axis formed by the rod.

18. The method of Claim 17 including the step of resiliently binding adjacent of the substrates.

19. The method of Claim 17 wherein the rod has a deformable surface in contact with each of the substrates supported thereon.

20. The method of Claim 17 wherein each of the substrates is internally supported on the rod.

21. The method of Claim 17 wherein the carrier is a drum and the rod is

vertical.

22. The method of Claim 17 wherein the rod is frictionally engaged with the internal surface of each substrate supported thereon to thereby prevent relative rotational movement between the rod and each substrate.

23. The method of Claim 17 wherein the rod is horizontal.

24. The method of Claim 17 in a sputter deposition process.

25. The method of Claim 17 including the step of masking the substrates so that the deposition material will not be deposited on selected portions of the substrates.

26. The method of Claim 17 wherein the substrates are lamp burner envelopes.

27. In a process of depositing a layer of material on an array of elongated substrates in which the array is moved past one or more sources of deposition material on a carrier while simultaneously rotating each substrate about its longitudinal axis, a method of improving the vertical density of the array comprising the steps of supporting one or more substrates on a single vertical rod and rotating the lowest one of the substrates to thereby rotate all of substrates supported by the rod about the axis formed by the rod.

28. In a process of depositing a layer of material on an array of elongated substrates in which the array is moved past one or more sources of deposition material on a carrier while simultaneously rotating each substrate about its longitudinal axis by supporting each substrate on an axial rotation means, a method of improving the horizontal density of the array comprising the step of alternating the vertical position of

adjacent axial rotation means.

29. The method of Claim 28 wherein the carrier is a cylindrical drum rotatable about its longitudinal axis wherein the longitudinal axis is vertical and one or more of the axial rotation means is a vertical rod which rotates each substrate supported thereon about the axis formed by the rod.

30. In a method of depositing a layer of material on the exterior surface of a lamp burner envelope which when completed as a lamp burner includes elements which would be damaged by baking at temperatures greater than a certain temperature, the steps of (a) depositing the layer of material and then (b) baking the burner envelope at temperatures greater than the certain temperature.

31. The method of Claim 30 wherein the certain temperature is about 400°C.

32. The method of Claim 30 wherein the certain temperature is about 600°C.

33. The method of Claim 30 wherein the certain temperature is about 1200°C.

34. The method of Claim 30 comprising the steps of baking the burner envelope at a first baking temperature for a first baking period followed by the step of raising the baking temperature and baking for another period of time.

35. The method of Claim 34 wherein the step of raising the baking temperature is repeated one of more times.

36. The method of Claim 30 wherein the material is deposited in a sputter deposition process and the burner envelope is baked to oxidize the deposited material to

form an optical interference coating.

37. In a process of hermetically sealing a lamp burner envelope having portions coated with a material which will be damaged if exposed to temperatures greater than a certain temperature wherein the sealing is performed by exposing one or more uncoated portions of the burner envelope to temperatures greater than the certain temperature, the step of preventing the exposure of the coated portions of the burner envelope to temperatures greater than the certain temperature.

38. The process of Claim 37 wherein the step of preventing the exposure of the coated portions of the burner envelope includes the step of providing a heat reflective shield.

39. In a method of manufacturing an IRR coated lamp burner including the steps of (a) coating portions of the lamp burner envelope with a first coating which will be damaged if exposed to temperatures greater than a certain temperature and (b) sealing the envelope to form a light emitting chamber by exposing one or more uncoated end portions of the burner envelope to temperatures greater than the certain temperature, the step of coating the first coated portions adjacent the uncoated portions to be exposed to temperatures greater than the certain temperature with a second coating which both (i) shields the first coating from exposure to temperatures greater than the certain temperature during the sealing process and (ii) reduces the loss of infrared radiation through the end portions during operation of the lamp.

40. In a process for assembling a halogen lamp having an IRR coating on the lamp burner envelope, the step of determining the optimum position of the filament relative to the burner envelope by measuring the electrical resistance of the filament.

41. In a process for aligning the filament in an IRR coated burner envelope in the assembly of a lamp, the step of determining the optimum position of the filament relative to the burner envelope by measuring the power applied to the filament to maintain a constant temperature of the filament.

42. In a process for aligning the filament in an IRR coated burner envelope in the assembly of a lamp, the step of determining the optimum position of the filament relative to the burner envelope by measuring the temperature of the filament while maintaining the power applied to the filament at a constant.

43. A method of aligning the filament in an IRR coated burner envelope in the assembly of a lamp comprising the steps of:

a. positioning the filament relative to the burner envelope;

b. applying power to the filament;

c. measuring the temperature of the filament;

d. adjusting the power applied to the filament to attain a predetermined filament temperature;

e. changing the position of the filament relative to the burner envelope;

f. measuring the power applied to the filament;

g. adjusting the power applied to the filament to maintain the temperature of the filament at the predetermined filament temperature;

h. determining the optimum position of the filament relative to the burner envelope by repeating steps (b) to (f) as necessary to determine the position of the filament relative to the burner envelope wherein the minimum power is applied to the filament to maintain the filament at the predetermined filament temperature.

44. The method of Claim 43 wherein the predetermined filament temperature is about 1500°C.

45. In a method of providing a plurality of coated devices including the step of cutting a section to form the plurality of devices and the step of coating at least a portion of the surface of the devices, the improvement wherein the step of coating is performed before the step of cutting.

46. In a method of making a lamp burner including the step of cutting an integral plurality of lamp burner envelopes to form individual lamp burner envelopes and the step of coating at least a portion of the surface of the lamp burner envelopes, the improvement wherein the step of coating is performed before the step of cutting.

47. The method of Claim 46 wherein the integral plurality of lamp burner envelopes form a generally tubular section of light transmitting material.

48. The method of Claim 47 wherein the step of coating the burner envelopes

includes the step of baking the coated integral burner envelopes.

49. A coated lamp burner envelope comprising a generally tubular unsealed section of light transmitting material having one or more materials deposited on at least a portion of the exterior surface thereof to form a coating.

50. A coated lamp burner envelope comprising (i) a generally tubular section of light transmitting material suitable for forming the light emitting chamber of a lamp burner by sealing the end portions thereof, and (ii) a first coating formed on at least a portion of the exterior surface of said section, whereby the end portions of said section are not sealed.

51. The coated lamp burner envelope of Claim 50 further comprising a second coating formed on one or more selected portions of the exterior surface of said section.

52. A sealed lamp burner having a first coating formed on at least a portion of the exterior surface thereof and a second coating formed on the portions of the surface of said burner adjacent the end portions of the burner, said second coating being suitable for preventing the exposure of the first coating to temperatures greater than a certain temperature when selected portions of the end portions of said burner are exposed to temperatures greater than the certain temperature.

53. A section of light transmitting material suitable for forming a lamp burner, said section having a coating formed on at least a portion of the exterior surface thereof, said coating comprising (i) one or more oxidized and unoxidized materials and (ii)

sufficient unbonded oxygen dissolved therein so that the unbonded oxygen will oxidize some or all of the unoxidized material when exposed to high temperatures.

54. A generally tubular section of light transmitting material suitable for forming a plurality of lamp burner envelopes by transversely cutting the section at selected locations along the length thereof, said section having a coating formed on at least a portion of the exterior surface of said section, whereby the coating is formed before the section is cut.

55. In an apparatus for uniformly depositing a layer of one or more materials on an array of elongated substrates including a carrier for carrying the array past one or more sources of the material to be deposited and a means for rotating each substrate about its longitudinal axis, the improvement wherein the axial rotation means comprises one or more elongated rods each having one or more substrates supported thereon for rotating the substrates supported thereon about the axis formed by the rod.

56. The apparatus of Claim 55 wherein the carrier comprises a cylindrical drum which is rotatable about its longitudinal axis, said drum carrying a plurality of axial rotation means spaced apart about the circumference of the drum.

57. The apparatus of Claim 55 wherein the rod is frictionally engaged with the internal surface each substrate supported thereon.

58. The apparatus of Claim 55 wherein the carrier comprises a flat surface which is linearly transported past the sources of the material to be deposited.

59. In an apparatus for determining the optimum position of the filament relative to the lamp burner envelope of a halogen lamp, said apparatus including a means for positioning the filament relative to the lamp burner envelope, the improvement wherein the apparatus further comprises a means for measuring the electrical resistance of the filament.

60. In an apparatus for determining the optimum position of the filament relative to the lamp burner envelope of a halogen lamp, said apparatus including a means for positioning the filament relative to the lamp burner envelope, the improvement wherein the apparatus further comprises a means for measuring the temperature of the filament.

61. An apparatus for aligning the filament relative to the lamp burner envelope in an IRR coated halogen lamp comprising:

a. means for positioning the filament relative to the burner envelope;

b. a source of electrical power operably connected to the filament;

c. a temperature measuring device for measuring the temperature of the filament; and

d. an electrical power measuring device for measuring the electrical power applied to the filament.